



Chemical/Biological Terrorism February 2003

1: Acta Medica (Hradec Kralove) 2002;45(3):85-8

Prophylaxis against anthrax.

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The paper presents fundamental knowledge concerning *Bacillus anthracis* and its potential terrorist misuse. The basic clinical forms are resumed with emphasis on inhalation infection from inspiration of *B. anthracis* spores. The AVA vaccine licensed in the United States, primary vaccination, protective efficacy of the vaccine, and adverse events are characterized. Stress is laid on pre-exposure and post-exposure prophylaxis of anthrax.

Publication Types: Review Review, Tutorial

PMID: 12515043 [PubMed - indexed for MEDLINE]

2: AIHA J (Fairfax, Va) 2003 Jan-Feb;64(1):95-101

A risk analysis approach to selecting respiratory protection against airborne pathogens used for bioterrorism.

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The authors present a quantitative risk analysis approach to estimating infection risk due to airborne pathogens exhibiting relatively large infectious dose values. The method is applied to hypothetical scenarios involving airborne spores of *Bacillus anthracis*. The method combines the estimated parameters for exposure intensity, the pathogen dose-response relationship, and respirator penetration values (if respiratory protection is used). Because knowledge of the true parameter values will be uncertain, an uncertainty analysis is an essential part of the process. Given a specified value for acceptable infection risk, the method permits choosing a respirator that sufficiently reduces exposure to meet the acceptable risk criterion. A strength of the risk analysis approach is its transparency, in that the model structure and data inputs are explicitly identified. Further, risk analysis informs the expert judgment that must typically be applied in selecting respiratory protection against airborne pathogens.

PMID: 12570401 [PubMed - in process]

3: AJR Am J Roentgenol 2003 Mar;180(3):563

Imaging characteristics of bioterrorism: signs of our times.

Rogers LF.

PMID: 12591654 [PubMed - in process]

4: Am J Emerg Med 2003 Jan;21(1):77-9

Meeting the challenge of bioterrorism: lessons learned from West Nile virus and anthrax.

Crupi RS, Asnis DS, Lee CC, Santucci T, Marino MJ, Flanz BJ.

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Hospital emergency departments (EDs) and ambulatory clinics may be the first to recognize illness related to a bioterrorist event. Every health-care institution must develop a weapons-of-mass-destruction (WMD) preparedness plan as part of its all-hazards disaster planning. As part of an all-hazards disaster plan, WMD preparedness should use the incident-command model to insure the required chain of command for effectively coordinating activities between hospital departments and external agencies. Preparedness for bioterrorism poses unique challenges. In the event of a biological attack, the hospital infection control staff and administration must already have in place the means to communicate with local and state public health agencies, the Centers for Disease Control and Prevention (CDC), local law-enforcement agencies, and the Federal Bureau of Investigation (FBI). Local and regional planners must consider how to coordinate the responses of emergency medical services (EMS), police, and fire departments with healthcare providers and the news media. Most hospitals are ill equipped to deal with a catastrophic event caused by WMD. The burden of responding to such events will fall initially on ED physicians and staff members. The severity of such an incident might be mitigated with careful planning, training and education. The responses of one hospital network to the outbreak of West Nile virus and, more recently, to the threat of anthrax, are presented as guides for bioterrorism preparedness. Copyright 2003, Elsevier Science (USA). All rights reserved.)

Publication Types: Review; Tutorial

PMID: 12563588 [PubMed - indexed for MEDLINE]

5: Am J Health Syst Pharm 2002 Jul 15;59(14):1331-2

Training requirements and opportunities in planning responses to bioterrorism.

Downs KE.

Office of Emergency Preparedness, US Department of Health and Human Services, Rockville, MD 20852, USA.

PMID: 12132558 [PubMed - indexed for MEDLINE]

6: Am J Infect Control 2002 Dec;30(8):490-4

Research opportunities in biodefense for the National Institute of Nursing Research.

Sigmon HD, Larson EL.

Office of Extramural Programs, National Institute of Nursing Research, Bethesda, MD, USA.

The threat of bioterrorism and the need for biodefense are new challenges for the scientific community. Bioterrorism already has had significant effects on the nation's health. Researchers involved in nursing research are addressing these effects and the many issues relevant to biodefense. To explore the role and potential contributions of nursing research in these arenas, the National Institute of Nursing Research recently convened a science work group. The work group highlighted current knowledge in biodefense, suggested opportunities for nursing research, and proposed specific research topics and research training needs. The topics are integral

to the strategic plan on biodefense developed by the National Institutes of Health and include biologic, behavioral, applied/translational, and health systems research.
PMID: 12461512 [PubMed - indexed for MEDLINE]

7: Am J Nurs 2003 Jan;103(1):112
Smallpox vaccines.
Peterson C.
PMID: 12544068 [PubMed - indexed for MEDLINE]

8: Ann Emerg Med 2003 Mar;41(3):414-8
Syndromic surveillance for bioterrorism following the attacks on the World Trade Center-New York City, 2001.
Moran GJ, Talan DA.
Department of Emergency Medicine and Division of Infectious Disease, Olive View-UCLA Medical Center, Sylmar, CA.
PMID: 12605212 [PubMed - in process]

9: Annu Rev Microbiol 2002;56:167-85
Bioterrorism: from threat to reality.
Atlas RM.
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The fears and predictions of attacks with biological weapons, which were increasing at the close of the twentieth century, were transformed into reality not long after September 11, 2001, when several anthrax-laden letters were sent through the U.S. postal system. The attack challenged our medical preparedness and scientific understanding of the epidemiology of biothreat agents. It is fortunate that this was not a massive aerosol release that could have exposed hundreds of thousands. Rapid diagnoses and medical treatments limited casualties and increased survival rates, but tragically some individuals died of inhalational anthrax. Even as physicians tested new treatment regimes and scientists employed new ways of detecting anthrax and decontaminating the mail, new predictions were made for potentially even more devastating attacks with anthrax, smallpox, plague, tularemia, botulism, or hemorrhagic fever viruses. Fear gripped the nation. Law enforcement sought to find the villain(s) who sent the anthrax letters and to deter future bioterrorist attacks. The biomedical community began to seek new ways of protecting against such future threats of bioterrorism.
Publication Types: Review; Review, Academic
PMID: 12142472 [PubMed - indexed for MEDLINE]

10: Arch Neurol 2003 Jan;60(1):21-5
Neurological aspects of biological and chemical terrorism: a review for neurologists.
Martin CO, Adams HP Jr.
Department of Neurology, University of Iowa College of Medicine, Iowa City, USA.
coleman-martin@uiowa.edu
The Centers for Disease Control and Prevention urge physicians to become familiar with chemical and biological weapons. Preparedness among neurologists is especially important because several of these agents affect the nervous system. This article reviews 4 agents that have a history of military or terrorist use: cyanide poisons, organophosphate poisons, botulinum toxin, and anthrax. Cyanide and organophosphate poisons are characterized by dose-dependent impairment of

neurological function with nonspecific symptoms such as headache or dizziness at one end of the spectrum and convulsions and coma at the other. Neurological examinations help clinicians to differentiate these agents from other intoxications. Botulinum toxin has a delayed onset of action and results in descending paralysis and prominent cranial nerve palsies. Anthrax frequently causes fulminating hemorrhagic meningitis. Early recognition of these chemical and biological weapons is key to instituting specific therapy and preventing casualties within the health care team and the community at large.

Publication Types: Review; Review Literature
PMID: 12533084 [PubMed - indexed for MEDLINE]

11: BMJ 2002 Dec 14;325(7377):1371-2
Interim smallpox guidelines for the United Kingdom.
Harling R, Morgan D, Edmunds WJ, Campbell H.
Publication Types: Editorial
PMID: 12480827 [PubMed - indexed for MEDLINE]

12: Br J Anaesth 2003 Jan;90(1):106; author reply 106-7
Comment on:
Br J Anaesth. 2002 Aug;89(2):211-4.
Br J Anaesth. 2002 Aug;89(2):306-24.
Treatment of biological and chemical casualties in the UK.
Shirley P.
Publication Types: Comment; Letter
PMID: 12488394 [PubMed - indexed for MEDLINE]

13: Br J Biomed Sci 2002;59(4):232-4
Bioterrorism: an overview.
Clarke SC.
Scottish Meningococcus and Pneumococcus Reference Laboratory, Department of Microbiology, House on the Hill, Stobhill Hospital, Balornock Road, Glasgow G21 3UW, UK. stuart.clarke@northglasgow.scot.nhs.uk
Bioterrorism has reached the forefront of the public imagination following recent events across the world. The disaster of 11 September 2001, followed by anthrax letters sent via the US postal system and now renewed tension over Iraq have all brought the possibility of bioterrorism closer. A number of biological agents could be used in a terrorist attack, including anthrax, plague, smallpox and botulinum toxin. The serious diseases that these agents produce have been brought under control in the developed world; however, a lack of protective immunity against such diseases could cause considerable morbidity and mortality if used in a terrorist attack. This essay provides a background to bioterrorism, discusses many of the current points of interest and gives an update to the economic consequences of such an attack.
PMID: 12572959 [PubMed - in process]

14: Br J Gen Pract 2003 Jan;53(486):5-6
The role of primary care in bioterrorism, epidemics and other major emergencies: failing to plan is planning to fail.
Hodgkin P, Perrett K.
Publication Types: Editorial
PMID: 12564269 [PubMed - in process]

- 15: Camb Q Healthc Ethics 2002 Fall;11(4):411-4
Of terrorism and healthcare: jolting the old habits.
Trotter G.
Center for Health Care Ethics, Saint Louis University, USA. trotterc@slu.edu PMID:
12360712 [PubMed - indexed for MEDLINE]
- 16: Can Commun Dis Rep 2002 Nov 15;28(22):183-8
[Who's response to the threat of the deliberate use of biological and chemical agents
to cause harm.]
[Article in English, French]
PMID: 12471828 [PubMed - indexed for MEDLINE]
- 17: Can Commun Dis Rep 2002 Nov 1;28(21):173-8
[Case definitions for diseases under national surveillance: addition of diseases
associated with potential bioterrorist agents.]
[Article in English, French]
PMID: 12448885 [PubMed - indexed for MEDLINE]
- 18: Clin Chest Med 2002 Dec;23(4):777-94
Pulmonary manifestations of intentionally released chemical and biological agents.
Bogucki S, Weir S.
Section of Emergency Medicine, Yale University School of Medicine, New Haven Fire
Department, New Haven, CT, USA. sandy.bogucki@yale.edu
Recent events have underscored the importance of knowledge and understanding of
biological and chemical agents that are intentionally released on civilian populations.
Preparedness of the medical community to recognize and manage the resulting
clinical syndromes will be a major determinant in the outcome of such attack, or a
community's 'prognosis' for survival. The biological and chemical agents that have
been weaponized produce diseases and toxidromes that are not commonly seen by
clinicians in most parts of the United States. Patients or clusters of patients who
present with febrile syndromes that are unusual for the geographic or seasonal
setting should trigger notification of public health authorities and the use of state or
national reference lab systems for augmented diagnostic support. In many cases,
early, empiric therapy, administered before definitive diagnosis, is required for
survival. The basic principles in the management of exposure to chemical agents
include containment, prevention of secondary exposure, rapid decontamination,
implementation of supportive and symptomatic care, and specific antidotes as
indicated and available.
Publication Types: Review; Review, Tutorial
PMID: 12512165 [PubMed - indexed for MEDLINE]
- 19: Clin Exp Rheumatol 2002 Mar-Apr;20(2):217-20
Anthrax vaccination and joint related adverse reactions in light of biological warfare
scenarios.
Geier DA, Geier MR.
MedCon, Inc, Silver Spring, Maryland, USA.
OBJECTIVES: The purpose of this analysis was to evaluate anthrax vaccine (AVA)
and joint related adverse reactions based upon analysis of the VAERS database in
light of the current possibility of the use of anthrax as a biological warfare agent.
METHODS: A certified copy of the VAERS database was obtained from the CDC. In
this study, we conducted a retrospective analysis using Microsoft Access for all joint

attributed adverse reactions reported following anthrax vaccination. The employment of chi-square analysis determined if the elevated incidence rates of associated adverse reactions in anthrax vaccine recipients were statistically significant.

RESULTS: Our analysis shows a very large and statistically significant increase in joint symptoms following vaccination with AVA when compared to our control population consisting of adverse joint reactions reported following vaccination with hepatitis A vaccine and Td vaccine. CONCLUSION: We believe that civilian doctors need to become familiar with the adverse reactions that can be expected to follow the use of AVA. Both civilian and military doctors need to be vigilant in reporting all such reactions to VAERS, so that more information can be gathered about AVA. We also believe that an anthrax vaccine with an improved safety profile is needed if it is to be used in populations, either military or civilian, that are not under imminent threat of attack by biological warfare agents. It should also be kept in mind that the widespread use of anthrax vaccination may cause potential producers of biological weapons and terrorists to seek to produce anthrax strains that are not neutralized by the current vaccine.

Publication Types: Evaluation Studies

PMID: 12051402 [PubMed - indexed for MEDLINE]

20: Comput Inform Nurs 2003 Jan-Feb;21(1):1-2

AHRQ researchers examine the role of informatics in responding to bioterrorism, mass disasters, and war.

Publication Types: News

PMID: 12585267 [PubMed - in process]

21: Curr Opin Pediatr 2003 Feb;15(1):107-11

Ring-a-ring-a-roses: bioterrorism and its peculiar relevance to pediatrics.

Cieslak TJ, Henretig FM.

*San Antonio Military Pediatric Center, San Antonio, Texas, and Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, USA.

PMID: 12544281 [PubMed - in process]

22: Curr Probl Dermatol 2002;30:101-6

Botulinum toxin in warfare.

Boni R.

Department of Dermatology, University Hospital of Zurich, Switzerland.

rboeni@derm.unizh.ch

Publication Types: Historical Article

PMID: 12471703 [PubMed - indexed for MEDLINE]

23: Emerg Med (Fremantle) 2002 Sep;14(3):230-9

Medical response to a terrorist attack and weapons of mass destruction.

Caldicott DG, Edwards NA, Tingey D, Bonnin R.

Emergency Department, Royal Adelaide Hospital, North Terrace, Adelaide, South Australia 5000, Australia. dcaldico@mail.rah.sa.gov.au

PMID: 12487039 [PubMed - indexed for MEDLINE]

24: Emerg Med (Fremantle) 2002 Sep;14(3):240-8

The tools of the trade: weapons of mass destruction.

Caldicott DG, Edwards NA.

Emergency Department, Royal Adelaide Hospital, North Terrace, Adelaide, South Australia 5000, Australia. dcaldico@mail.rah.sa.gov.au

PMID: 12487040 [PubMed - indexed for MEDLINE]

25: Epidemiol Infect 2002 Dec;129(3):429-34

Testing a symptom-based surveillance system at high-profile gatherings as a preparatory measure for bioterrorism.

Osaka K, Takahashi H, Ohyama T.

Infectious Disease Surveillance Center, National Institute of Infectious Diseases, Tokyo, Japan.

We tested symptom-based surveillance during the G8 conference in 2000 as a means of detecting outbreaks, including bio-terrorism attacks, promptly. Five categories of symptoms (skin and haemorrhagic, respiratory, gastrointestinal, neurological and unexplained) were adopted for the case definition of the surveillance. The surveillance began 1 week before the conference, and continued until 1 week after the conference ended. We could not detect any outbreaks during this surveillance. Compared to the existing diagnosis-based surveillance system, symptom-based surveillance has the advantages of timeliness and simplicity. However, poor specificity and difficulties in determining epidemic threshold were important limitations of this system. To increase the specificity of surveillance, it is essential to incorporate rapid laboratory diagnoses into the system.

Publication Types: Evaluation Studies

PMID: 12558324 [PubMed - indexed for MEDLINE]

26: Hastings Cent Rep 2002 Mar-Apr;32(2):9-11

Law and ethics in a public health emergency.

Gostin LO.

PMID: 11998778 [PubMed - indexed for MEDLINE]

27: Healthcare Benchmarks Qual Improv 2003 Jan;10(1):11-2

Med school teaches bioterror response.

Subtle, natural course changes are seen as most effective. Students are trained to respond to "all events," not just specific attacks. Efforts are under way to enable benchmarking by other institutions.

PMID: 12561128 [PubMed - indexed for MEDLINE]

28: Hosp Mater Manage 2002 Dec;27(12):1, 9-10

Innovation, cooperation keys to terror response.

DeJohn P.

PMID: 12521049 [PubMed - indexed for MEDLINE]

29: Immunol Lett 2002 Oct 1;83(3):151-2

Immunological consequence of sulfur mustard exposure.

Hassan ZM, Ebtekar M.

Global reports indicate that chemical weapons still impose a serious threat to world security and health. Sulfur mustard is a chemical compound with devastating short and long-term effect on human health.

Publication Types: Letter

PMID: 12095704 [PubMed - indexed for MEDLINE]

30: Infect Immun 2003 Jan;71(1):584-7

Biodefense-driven murine model of pneumonic melioidosis.

Jeddeloh JA, Fritz DL, Waag DM, Hartings JM, Andrews GP.

Bacteriology Division, U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland 21702-5011, USA. jjeddeloh@oriongenomics.com

A whole-body mouse model of pneumonic melioidosis was established for future evaluation of biodefense vaccine candidates. The aerosol 50% lethal doses of *Burkholderia pseudomallei* strain 1026b for BALB/c and C57BL/6 mice and the times to death, dissemination in organs, and tissue loads after exposure of the mice to low- and high-dose aerosols are reported. In addition, *rpsL* mutant backgrounds were attenuated in this acute model of disease.

Publication Types: Evaluation Studies

PMID: 12496217 [PubMed - indexed for MEDLINE]

31: J AHIMA 2003 Jan;74(1):36-8, 40, 42; quiz 45-6

A shot in the arm for public health. Weak systems require reinforcement at all levels. Lee CD.

claire@mcstrategies.com

PMID: 12530345 [PubMed - indexed for MEDLINE]

32: J AHIMA 2002 Jan;73(1):14, 16-7

How bioterrorism became an HIM issue.

Rode D.

dan.rode@ahima.org

PMID: 12580203 [PubMed - indexed for MEDLINE]

33: J AHIMA 2002 Jan;73(1):70-3; quiz 75-6

Anthrax: what every coder should know.

Stanfill MH.

mary.stanfill@ahima.org

PMID: 12469669 [PubMed - indexed for MEDLINE]

34: J Am Osteopath Assoc 2002 Dec;102(12):662-4

Curricular and pedagogic questions raised by recent medical education efforts on bioterrorism.

Heun LR.

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This article outlines the development of learning materials to educate osteopathic medical students about biological terrorism at the American Association of Colleges of Osteopathic Medicine (AACOM). The author then poses two questions that arose from this and concurrent AACOM projects and new technologic developments in medical education, regarding what colleges of osteopathic medicine teach and how they teach it.

PMID: 12501984 [PubMed - indexed for MEDLINE]

35: J Am Vet Med Assoc 2002 Jul 1;221(1):40-3

Biological terrorism against animals and humans: a brief review and primer for action.

Noah DL, Noah DL, Crowder HR.

Office of the Air Force Surgeon General Headquarters, United States Air Force, Bolling Air Force Base, Washington, DC 20330, USA.

Publication Types: Review; Review, Tutorial

PMID: 12420822 [PubMed - indexed for MEDLINE]

36: J Am Vet Med Assoc 2002 Mar 1;220(5):575-7

Network of veterinary diagnostic laboratories would strengthen nation's biosecurity.

Nolen RS.

Publication Types: News

PMID: 12418510 [PubMed - indexed for MEDLINE]

37: J Community Health Nurs 2002 Winter;19(4):203-11

Bioterrorism preparedness for local health departments.

Morse A.

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Bioterrorism preparedness has not traditionally been an everyday concern of local public health departments. The likely first responders to a biological bioterrorism event will be local public health personnel. The events of September 11, 2001, and the anthrax crisis that followed tested the capabilities of the public health system and demonstrated its fragility. Little federal funding has trickled down to local health departments, and they have not been included in planning or training for bioterrorism preparedness. Now local health departments must develop detailed bioterrorism response plans. Effective plans will involve internal assessment of strengths and weaknesses and strategizing with other local community agencies. Our health department is a suburban county agency that serves a population of over 250,000. We have started this self-assessment and planning process. This bioterrorism guide has provided some structure for us and may be helpful for other local health departments as they begin this process.

PMID: 12494741 [PubMed - indexed for MEDLINE]

38: J Contin Educ Nurs 2002 Nov-Dec;33(6):253-8

Knowledge and awareness concerning chemical and biological terrorism: continuing education implications.

Rose MA, Larrimore KL.

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BACKGROUND: A survey on knowledge and awareness concerning chemical and biological terrorism was used to assess the knowledge base of health care providers at an urban medical center in preparation for developing a workshop on domestic terrorism preparedness. A second survey assessing domestic terrorism preparedness of infection control personnel and nurse educators also was conducted. METHOD: A total of 291 nurses, physicians, nursing students, and medical students completed the knowledge and awareness survey. A total of 24 infection control personnel and nurse educators completed the second survey on

domestic terrorism preparedness. FINDINGS: The knowledge scores of the respondents were low, with less than one fourth of the knowledge questions answered correctly. In addition, less than 23% of the respondents reported confidence to provide health care in a hypothetical chemical terrorism situation.

CONCLUSION: These findings indicate a need for nurses in continuing education and staff development to develop, implement, and evaluate innovative domestic terrorism preparedness programs.

PMID: 12442873 [PubMed - indexed for MEDLINE]

39: J Emerg Med Serv JEMS 2002 Dec;27(12):90

FirstWatch: bioterrorism alert system for EMS.

Garza MA.

PMID: 12493998 [PubMed - indexed for MEDLINE]

40: J Emerg Nurs 2002 Dec;28(6):552-5

The threat of terrorism--can our emergency medical systems ever be prepared?
Boatright JR.

Priority Mobile Health, New Orleans, LA 70174, USA. jan@priority.net

PMID: 12509735 [PubMed - indexed for MEDLINE]

41: J Environ Health 2002 Oct;65(3):46-7

Disaster preparedness and the risky future.

Parvis L.

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PMID: 12369245 [PubMed - indexed for MEDLINE]

42: J Environ Monit 2002 Oct;4(5):688-94

The use of thermal desorption in monitoring for the chemical weapons
demilitarization program.

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Alabama at Birmingham, 35294-0022, USA.

Under international treaty, the United States and Russia are disposing of their aging
stockpile of chemical weapons. Incineration and chemical neutralization are options
for sites in the United States, although Russia prefers the latter. The storage and
disposal of bulk and chemical agents and weapons involve unique hazards of
handling extremely toxic materials. There are three major areas of concern--the
storage stockpile, the disposal area, and the discovery and destruction of "found"
material not considered part of the stockpile. Methods have been developed to detect
the presence of chemical agents in the air, and these are used to help assure worker
protection and the safety of the local population. Exposure limits for all chemical
agents are low, sometimes nanograms per cubic meter for worker control limits and
picograms per cubic meter for general population limits. There are three types of
monitoring used in the USA: alarm, confirmation, and historical. Alarm monitors are
required to give relatively immediate real-time responses to agent leaks. They are
simple to operate and rugged, and provide an alarm in near real-time (generally a
few minutes). Alarm monitors for the demilitarization program are based on sorbent
pre-concentration followed by thermal desorption and simple gas chromatography.
Alarms may need to be confirmed by another method, such as sample tubes
collocated with the alarm monitor and analyzed in a laboratory by more sophisticated
chromatography. Sample tubes are also used for historical perimeter monitoring,
with sample periods typically of 12 h. The most common detector is the flame
photometric detector, in sulfur or phosphorous mode, although others, such as
mass-selective detectors, also have been used. All agents have specific problems
with collection, chromatography and detection. Monitoring is not made easier by
interferences from pesticide spraying, busy roadways or military firing ranges.
Exposure limits drive the requirements for analytical sensitivity. Lowering limits adds
additional difficulties to the monitoring efforts. The various monitoring methods and
the role they play in ensuring worker and general population safety are discussed.

PMID: 12400916 [PubMed - indexed for MEDLINE]

43: J Fam Pract 2003 Jan;52(1 Suppl):S56-61

Vaccines and bioterrorism: smallpox and anthrax.

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Because of the success of vaccination and the ring strategy in eradicating smallpox from the world, smallpox vaccine has not been recommended for the United States civilian populations for decades. Given the low but possible threat of bioterrorism, smallpox vaccination is now recommended for those teams investigating potential smallpox cases and for selected personnel of acute-care hospitals who would be needed to care for victims in the event of a terrorist attack. Treatment and post-exposure prophylaxis for anthrax are ciprofloxacin or doxycycline. Anthrax vaccine alone is not effective for post-exposure prevention of anthrax; vaccination is accompanied by 60 days of antibiotic therapy. In addition to military use, anthrax vaccine is recommended for pre-exposure use in those persons whose work involves repeated exposure to *Bacillus anthracis* spores.

Publication Types: Review; Review, Tutorial
PMID: 12556279 [PubMed - indexed for MEDLINE]

44: J Law Med Ethics 2002 Fall;30(3 Suppl):202-9

The future of public health preparedness.

Nunn S.

This redacted version of a speech by former United States Senator Sam Nunn, Chairman of the Nuclear Threat Initiative, points out that although there are concerns about global issues involving security and weapons of mass destruction and bioterrorism, it was not until September 11, 2001, that these issues (and new, unforeseen ones) were getting the funding and attention they deserved. In the event of a biological attack, millions of lives may depend on how quickly we diagnose the effects, report the findings, disseminate information to the healthcare communities and to state and local governments, and bring forth a fast and an effective response at the local, state, and federal levels. Public health must become an indispensable pillar of our national security framework. As we develop a national strategy to respond to these challenges, we must think in the broader context of causes as well as symptoms. To provide context for the next 25 years, Senator Nunn provided an overview of the "Seven Revolutions" for change identified by the Center for Strategic and International Studies (CSIS) with which he is also associated. Finally, he discusses major security challenges facing the United States.

PMID: 12508527 [PubMed - indexed for MEDLINE]

45: J Law Med Ethics 2002 Fall;30(3 Suppl):184-8

Preparedness on the frontline: what's law got to do with it?

Lichtveld M, Hodge JG Jr, Gebbie K, Thompson FE Jr, Loos DI.

Public Health Practice Program Office, Centers for Disease Control and Prevention, Atlanta, Georgia, USA.

The article provides an overview of current work toward identifying core competencies for public health emergency and bio-terrorism response, including law-related competencies. It demonstrates how competency sets are interrelated and how they provide a framework for developing preparedness training for public health leaders, public health and health care professionals, law enforcement, public health attorneys, and others. The health and safety of America's communities hinge on the nation's public health workforce--the estimated 448,254

public health professionals and 3 million related workforce professionals who form the expanded public health system that protects us during times of national crisis and in our daily lives. The response capacity of our health agencies and communities

and their ability to respond effectively will be unpredictable without adequate training. Education in the core competencies in emergency preparedness and bio-terrorism response is essential. Preparedness at the front-line means that public health leaders and administrators must be able to communicate information, roles, capacities, and legal authorities to all emergency response partners during planning, drills, and actual emergencies. Each public health worker must be able to describe his or her communication role in emergency response within the agency, with the media, and with the general public. Law enforcement and state government representatives must understand the legal powers of their agencies and of public health agencies for coordinated response, mitigation, and recovery efforts in a public health emergency event.

Publication Types: Review; Review, Tutorial
PMID: 12508524 [PubMed - indexed for MEDLINE]

46: J Law Med Ethics 2002 Fall;30(3 Suppl):57-62

The power to act: two model state statutes.

Erickson DL, Gostin LO, Street J, Mills SP.

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Enabling statutes for state and local public health agencies set forth their powers and duties and provide the legal basis for their work. Obsolescence, inconsistency, and inadequacy may render some public health laws ineffective or even counterproductive. Reforming state public health law can improve the legal infrastructure that supports public health systems in responding to bioterrorism and other public health threats. Two legal tools available to assist the process of establishing a strong legal foundation for public health practice are the Model State Emergency Health Powers Act, developed in 2001 by the Center for Law and the Public's Health, and the Model State Public Health Act, currently under development by the Turning Point Public Health Statute Modernization National Collaborative. These model acts can serve as guides for assessing current state public health law, and they provide example statutory language for use by those working to update their laws. That strong state public health law and model public health acts serve as resources for law reform is recognized by local health officials and state legislators as well as by state public health officials. Lessons learned from recent experiences with crafting and introducing legislation based on the Model State Emergency Health Powers Act can prove useful in the future to those working on public health law reform efforts in their states.

PMID: 12508504 [PubMed - indexed for MEDLINE]

47: J Law Med Ethics 2002 Fall;30(3 Suppl):52-6

Legal preparedness for bioterrorism.

Matthews GW, Benjamin G, Mills SP, Parmet W, Misrahi JJ.

Centers for Disease Control and Prevention, Atlanta, Georgia, USA.

Responding to a terrorist biological weapon attack poses new challenges not only for the public health response community but also to the very construct of public health police powers as we know them today. States are debating the merits of revising and updating these powers in order to ensure an effective and legally appropriate response. This article covers three aspects of the policy debate: the experience in one state from a legislative perspective, a discussion from an academic viewpoint, and one example of the role of enhanced powers from the response perspective.

PMID: 12508503 [PubMed - indexed for MEDLINE]

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Improving information access for public health professionals.

Telleen S, Martin E.

Department of Sociology, University of Illinois at Chicago, USA. telleen@uic.edu

Fundamental to our protection against biological weapons and the detection of disease outbreaks is the need to strengthen our surveillance systems. Improved electronic communications between local, state, and federal public health agencies provide a way for health officials to share information on unusual disease outbreaks and provide important health alert information. This article describes a model of a partnership between a regional medical library of the National Library of Medicine, a school of public health, and federally qualified community health centers. This project upgraded technology and provided public health professional training on Internet information and resources for local public health agencies.

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Rural bioterrorism: are we exempt?

Rosenthal TC.

Publication Types: Comment

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Smallpox vaccine program launched amid concerns raised by expert panel, unions.
Stephenson J.

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Bioterrorism alert.

Fitzpatrick M.

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Diagnosing smallpox in possible bioterrorist attack.

Madeley CR.

Stocksfield, NE43 7TN, Northumberland, UK. dickmadeley@aol.com

PMID: 12531572 [PubMed - indexed for MEDLINE]

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The reality of the modern bioterrorism response.

Barbera JA, Macintyre AG.

Institute for Crisis, Disaster, and Risk Management, George Washington University, Washington DC, USA

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Positive response to US smallpox vaccine policy.

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Bioterrorism treatment information.

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Modeling the public health response to bioterrorism: using discrete event simulation to design antibiotic distribution centers.

Hupert N, Mushlin AI, Callahan MA.

Departments of Public Health and Medicine, Weill Medical College of Cornell University, New York Presbyterian Hospital, New York City, USA.

BACKGROUND: Post-exposure prophylaxis is a critical component of the public health response to bioterrorism. Computer simulation modeling may assist in designing antibiotic distribution centers for this task. METHODS: The authors used discrete event simulation modeling to determine staffing levels for entry screening, triage, medical evaluation, and drug dispensing stations in a hypothetical antibiotic distribution center operating in low, medium, and high disease prevalence bioterrorism response scenarios. Patient arrival rates and

processing times were based on prior mass prophylaxis campaigns. Multiple sensitivity analyses examined the relationship between average staff utilization rate (UR) (i.e., percentage of time occupied in patient contact) and capacity of the model to handle surge arrivals. RESULTS: Distribution center operation required from 93 staff for the low-prevalence scenario to 111 staff for the high-prevalence scenario to process approximately 1000 people per hour within the baseline model assumptions. Excess capacity to process surge arrivals approximated (1-UR) for triage staffing.

CONCLUSIONS: Discrete event simulation modeling is a useful tool in developing the public health infrastructure for bioterrorism response. Live exercises to validate the assumptions and outcomes presented here may improve preparedness to respond to bioterrorism.

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57: Med Device Technol 2002 Nov;13(9):70-2

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PMID: 12534161 [PubMed - indexed for MEDLINE]

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Food for thought: the use of hazard and critical control point analysis to assess vulnerability of food to terrorist attack in deployment locations.

Hall SD 3rd, Herbold J, England EC.

375 AMDS/SGPM, Public Health Office, Scott Air Force Base, IL 62225, USA.

As part of a screening study, a literature review, personal interviews, and field work at several deployment locations, we examined the historical use of biological warfare agents and the vulnerability of food at military deployment locations to bioterrorist attack. The results of our experience suggest the following: historically, food has occasionally been used as a weapon by individuals; a benchmark procedure already exists to evaluate and ensure the safety of foods procured and used by the U.S. federal government; and food sources at the deployment locations examined are vulnerable to terrorist attack

as determined by a critical control point analysis. Recommendations to potentially decrease the vulnerability of the U.S. military food supply to intentional contamination are also provided.

Publication Types: Historical Article

PMID: 12502176 [PubMed - indexed for MEDLINE]

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Smallpox, big worries. Preparing medical-response teams is easier said than done, according to healthcare providers across the nation.

Piotrowski J.

Preparations for healthcare workers to respond to a smallpox attack pose an array of daunting challenges, both financial and logistical, that must be addressed in a few weeks. By the end of the month, a massive corps of doctors, nurses and other healthcare workers will voluntarily receive the smallpox vaccine as part of the first phase of a national strategy announced last month by President Bush.

PMID: 12545520 [PubMed - indexed for MEDLINE]

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A time for preparedness. With funding on its way, hospitals need to get ready for bioterror attacks.

Frist B.

United States Senate, USA.

PMID: 12528236 [PubMed - indexed for MEDLINE]

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Comment in: N Engl J Med. 2003 Jan 30;348(5):381-2.

A model for a smallpox-vaccination policy.

Bozzette SA, Boer R, Bhatnagar V, Brower JL, Keeler EB, Morton SC, Stoto MA.
RAND Center for Domestic and International Health Security, Santa Monica, Calif, USA.

BACKGROUND: The new reality of biologic terrorism and warfare has ignited a debate about whether to reintroduce smallpox vaccination. METHODS: We developed scenarios of smallpox attacks and built a stochastic model of outcomes under various control policies. We conducted a systematic literature review and estimated model parameters on the basis of European and North American outbreaks since World War II. We assessed the trade-offs between vaccine-related harms and benefits.

RESULTS: Nations or terrorists possessing a smallpox weapon could feasibly mount attacks that vary with respect to tactical complexity and target size, and patterns of spread can be expected to vary according to whether index patients are hospitalized early. For acceptable results, vaccination of contacts must be accompanied by effective isolation. Vaccination of contacts plus isolation is expected to result in 7 deaths (from vaccine or smallpox) in a scenario involving the release of variola virus from a laboratory, 19 deaths in a human-vector scenario, 300 deaths in a building-attack scenario, 2735 deaths in a scenario involving a low-impact airport attack, and 54,729 deaths in a scenario involving a high-impact airport attack. Immediate vaccination of the public in an attacked region would provide little additional benefit. Prior vaccination of health care workers, who would be disproportionately affected, would save lives in large local or national attacks but would cause 25 deaths nationally. Prior vaccination of health care workers and the public would save lives in a national attack but would cause 482 deaths nationally. The expected net benefits of vaccination depend on the assessed probability of an attack. Prior vaccination of health care workers would be expected to save lives if the probability of a building attack exceeded 0.22 or if the probability of a high-impact airport attack exceeded 0.002. The probability would have to be much higher to make vaccination of the public life-saving. CONCLUSIONS: The analysis favors prior vaccination of health care workers unless the likelihood of any attack is very low, but it favors vaccination of the public only if the likelihood of a national attack or of multiple attacks is high. Copyright 2003 Massachusetts Medical Society

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Bioterrorism's invisible threats: heightened awareness will help nurses identify real and suspected bioterrorism.
Altman GB.
University of Washington, Seattle, Wash., USA.
Ready your nursing staff for potential bioterrorism with this review of the symptoms and treatment of anthrax, smallpox, plague, tularemia, and botulism.
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U.S. tested a nerve gas in Hawaii.

Shanker T.

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Smallpox vaccine and pregnancy.

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Jensen R.

Stevens Publishing Corp., Dallas, Texas, USA.

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Disasters and bioterrorism: does management training develop readiness?

Orton S, Umble K, Davis MV, Porter JE.

The North Carolina Institute for Public Health, School of Public Health, University of North Carolina at Chapel Hill, USA.

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Anthrax attacks and practice patterns: a learning opportunity for health care systems.

Jones JW, Kiefe CI.

Birmingham VAMC, Birmingham, Alabama, USA.

Sudden and unexpected events directly influencing clinical practice patterns are uncommon. After the first report of bioterrorism-related anthrax, the authors studied retrospectively 13 months of anthrax-related antibiotic prescription rates for Veterans Affairs outpatients in one urban area where no cases of anthrax were reported. During the 26 days after the first anthrax report, the rate of acute respiratory illnesses treated with fluoroquinolones was 62.8 per 10,000 outpatient visits, an increase of 41 percent over the rate of 44.4 observed approximately one year earlier ($p = 0.058$). Acute sociopolitical events such as bioterrorist attacks present a unique opportunity to investigate changes in health care.

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Chess C, Celia J.

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Smallpox shots: make them mandatory. When it comes to epidemic diseases, you don't get to decide. The state decides.
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An 'injury-time integral' model for extrapolating from acute to chronic effects of phosgene.

Hatch G, Kodavanti U, Crissman K, Slade R, Costa D.

Pulmonary Toxicology Branch, Experimental Toxicology Division, National Health and Ecological Effects Research laboratory, US EPA, Research Triangle Park, North Carolina 27711, USA. hatch.gary@epa.gov

The present study compares acute and subchronic episodic exposures to phosgene to test the applicability of the 'concentrationxtime' (CxT) product as a measure of exposure dose, and to relate acute toxicity and adaptive responses to chronic toxicity. Rats (male Fischer 344) were exposed (six hours/day) to air or 0.1, 0.2, 0.5 and 1.0 ppm of phosgene one time or on a repeated regimen for up to 12 weeks as follows: 0.1 ppm (five days/week), 0.2 ppm (five days/week), 0.5 ppm (two days/week), or 1.0 ppm (one day/week) (note that the CxT for the three highest exposures was the same). Animals were sacrificed at 4, 8, and 12 weeks during the exposure and after four weeks recovery. Bronchoalveolar lavage (BAL) was performed 18 hours after the last exposure for each time period and the BAL supernatant assayed for protein. Elevated BAL fluid protein was defined as 'acute injury', diminished response after repeated exposure was defined as 'adaptation', and increased lung hydroxyproline or trichrome staining for collagen was defined as 'chronic injury'. Results indicated that exposures that cause maximal chronic injury involve high exposure concentrations and longer times between exposures, not high CxT products. A conceptual model is presented that explains the lack of CxT correlation by the fact that adaptation reduces an 'injury-time integral' as phosgene exposure is lengthened from acute to subchronic. At high exposure concentrations, the adaptive response appears to be overwhelmed, causing a continued injury-time integral, which appears to be related to appearance of chronic injury. The adaptive response is predicted to disappear if the time between exposures is lengthened, leading to a continued high injury-time integral and chronic injury. It has generally been assumed that long, continuous exposures of rodents is a conservative approach for detecting possible chronic effects. The present study suggests that such an approach may not be conservative, but might actually mask effects that could occur under intermittent exposure conditions.

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The smallpox conundrum.

Spake A.

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Bioterrorism and the biotechnologist.

Spier RE.

School of Biological Sciences, University of Surrey, Guildford, GU2 7XH, Surrey, UK

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